

3.11.2 ENVIRONMENTAL CONSEQUENCES

3.11.2.1 Methodology

To determine potential transportation impacts, WSDOT, Benton County, and Washington State Patrol staff were consulted to understand existing conditions and concerns. Areas or intersections analyzed and discussed in this section were included because they would have the greatest potential impact from the PGF construction and operation. Through the data analysis it was also determined which location would have the greatest potential impact (the SR 14/Plymouth Road intersection) and that other locations would have less or no significant impact. Data were not available for the I-82/SR 14 interchange or the Christy Road/SR 14 intersection. Impacts were considered high (significant) if they would result in any of the following three criteria:

- A decrease in LOS to below the Benton County standard of LOS C at a given intersection after mitigation
- Unmet parking needs
- New or significant traffic volume crossing the BNSF railroad tracks

Impacts would be moderate if the project would result in a modest change to traffic volumes, patterns, or LOS. Impacts would be low if the project would result in no noticeable change to traffic volumes, patterns, or LOS.

3.11.2.2 No Action Alternative

Under the No Action Alternative, the PGF would not be constructed and therefore no additional auto or truck trips would be added due to the project. No impacts upon any type of transportation (road, rail, air, river) would occur.

3.11.2.3 Proposed Action

3.11.2.3.1 Plant Site and Access Road

Construction

PGF construction activities would last approximately 24 months and result in increased traffic activity in the site area and around the plant site due to workers and equipment delivery trucks arriving and departing. Traffic delays could occur due to the maneuvering of large vehicles carrying heavy loads and from additional vehicles on Plymouth Industrial Road. On average, 130 workers would work at the PGF site during construction.

Access to the site during construction would be provided by Plymouth Industrial Road, from SR 14. As part of the Proposed Action, an access road would be extended from a point on the Plymouth Industrial Road and lead to an entrance at the northeast corner of the plant site. The existing portion of Plymouth Industrial Road would be increased from 24 to 36 feet wide, and

PGF vehicles would share this roadway with the AgriNorthwest grain facility. A photograph of the proposed access road intersection with SR 14 is provided on Figure 3.11-2.

In addition, at the point where the existing Plymouth Industrial Road meets the rail facility, an offload platform would be constructed for large pieces of equipment that would be delivered to the plant site by rail. The large equipment (i.e., turbines, HSRG parts, etc.) would be off-loaded onto trucks at the off-load platform for transport to the plant site. To off-load, a temporary overhead crane would be placed on the platform and equipment would be transferred from rail cars to special transporters that would convey equipment to the plant site. Timing of travel of the rail shipments on the BNSF Railway would be coordinated with BNSF. Timing of off-loading would be coordinated with AgriNorthwest. Anticipated impacts to rail transportation would be low. No use of local or regional airports or river ports are expected due to the project; therefore, no air or river transportation impacts would be anticipated.

Peak construction activity is estimated to last 4 months of the 24-month construction period, and would require approximately 222 construction workers on a daily basis. Typically, some carpooling would occur for these trips. Assuming an average vehicle occupancy of 1.3 workers per vehicle, approximately 288 daily vehicle-trips are anticipated (ITE 1997). Daily truck activity is estimated to be up to 20 deliveries per day, which would result in approximately 40 daily truck trips during this peak construction period.

It is assumed that construction traffic trips would be distributed as follows: 70 percent traveling to and from east of the plant site on SR 14 and 30 percent traveling to and from west of the plant site on SR 14. Many of the a.m. truck trips could occur outside of the a.m. peak period, depending on their origin location and start time. Short-term delays (approximately 1 to 2 seconds) are anticipated during the p.m. peak at the intersection of SR 14 and Plymouth Road, based on the results shown in Table 3.11-4. The LOS would not reach level C with construction of the project. It is anticipated that short-term construction impacts would be moderate.

SR 14 is a limited access highway, which is a classification that allows for efficient travel time and increases overall safety of the SR 14 corridor. Short-term, potential moderate impacts to travel safety could occur due to the turning movements of trucks onto and off of SR 14 at Plymouth Industrial Road during the peak construction period. No high (significant) construction impact is anticipated.

Operation

The PGF is designed to operate continuously (24 hours a day, 7 days a week) with a workforce of approximately 20 full-time employees. The workforce allocation per each 8-hour shift (over three shifts) would be approximately 12 people working from 8 a.m. to 4 p.m.; 2 people working from 4 p.m. to 12 a.m.; and 2 people working from 12 a.m. to 8 a.m.

The alternative shift schedule would be two 12-hour shifts, with 12 people working from 6 a.m. to 6 p.m. and 2 people working from 6 p.m. and 6 a.m. The worst-case scenario for traffic, which would be the three 8-hour shifts, was used for this analysis.

**Table 3.11-4
Level of Service Summary for Construction**

Unsignalized Intersection	Weekday Peak Hour Period	Existing Conditions		Projected 2004 Traffic			
		Delay (sec.)	LOS	Without Project	/	With Project	
				Delay (sec.)	LOS	Delay (sec.)	LOS
SR 14 Eastbound Left Turn	AM	7.5	A	7.5	A	8.0	A
	PM	7.4	A	7.4	A	7.4	A
SR 14 Westbound Left Turn	AM	7.3	A	7.4	A	7.4	A
	PM	7.7	A	7.6	A	8.2	A
Plymouth Rd. Northbound Left Turn	AM	9.1	A	9.1	A	9.7	A
	PM	9.4	A	9.4	A	11.1	B
Plymouth Rd. Southbound Left Turn	AM	10.1	B	10.3	B	12.5	B
	PM	10.9	B	11.1	B	13.7	B

The number of anticipated vehicle trips for the PGF was calculated based on the reference manual *Trip Generation* (Institute of Transportation Engineers 1997) land use code 110 (General Light Industrial). The analysis assumed (worst-case) an onsite workforce slightly higher than would typically be onsite at any one time (20 employees), and that each employee would drive to work alone and therefore account for 40 daily trips (20 entering and 20 exiting). In addition, it is estimated that 20 daily trips (10 entering and 10 exiting) would be associated with service vehicles (e.g., delivery trucks or site visitors). Therefore, it was assumed that a total of 60 daily vehicle trips (30 entering and 30 exiting) would be generated by the PGF.

The estimated 2005 traffic volumes (Table 3.11-3) serve as the baseline condition for examination of the effects of the PGF. The distribution of operational traffic trips is expected to be the same as for construction trips: 70 percent of the trips would be eastbound on SR 14 and 30 percent of the trips would be westbound on SR 14, primarily originating from the Tri-Cities and Umatilla areas.

The peak-hour trip generation would be 30 vehicle trips per hour. The a.m. peak hour would result in approximately 25 vehicles entering and 5 vehicles exiting, while the p.m. peak hour would be the reverse, with 25 vehicles exiting and 5 vehicles entering.

It is anticipated that most of the employees, delivery trucks, and site visitors to the PGF would come from the Tri-Cities or Umatilla areas, primarily via I-82. The SR 14 to Plymouth Industrial Road route would likely be used for 100 percent of the vehicle trips from the surrounding areas, with 70 percent of the vehicle trips leaving the site and turning east onto SR 14 towards I-82 and 30 percent of the vehicle trips turning west onto SR 14. These trips would be originating from employee homes or truck origination points.



View from eastbound SR 14. Plymouth Industrial Road and proposed access road shown on the right.



View from eastbound Christy Road. Alternative operation access road shown on the left.

Figure 3.11-2
Access Road Photos

Figure 3.11-2 (Continued)

To estimate future traffic volumes, the potential PGF-generated traffic volumes were distributed onto the surrounding roadway network in accordance with the percentages noted above. Peak-hour traffic volumes that include the 2 percent traffic growth per year, the proposed project traffic volumes, as well as other projects noted in Section 3.11.1.1.1 (a total of 30 vehicle trips) were calculated and are presented in Table 3.11-5.

**Table 3.11-5
Estimated Future Traffic Volumes With Project, 2005**

Location	Traffic Volumes	
	AM Peak (7:00 – 9:00 am)	PM Peak (4:00 – 6:00 pm)
SR 14 - eastbound	73	211
SR 14 - westbound	195	113
Plymouth Rd. - northbound	14	33
Plymouth Rd. - southbound	14	39

A peak-hour LOS analysis was completed for the intersection of SR 14 and Plymouth Road. The results show that the small increase in traffic traveling through the intersection would cause little or no perceptible change to operations. As shown in Table 3.11-6, the maximum change in average stopped delay would amount to less than 1 second for any vehicle turning movement. A low impact to roadway traffic would be anticipated attributable to PGF operation.

**Table 3.11-6
Level of Service Summary**

Unsignalized Intersection	Weekday Peak Hour Period	Existing Conditions		Projected 2005 Traffic			
		Delay (sec.)	LOS	Without Project Delay (sec.)	Without Project LOS	With Project Delay (sec.)	With Project LOS
SR 14 Eastbound Left Turn	AM	7.5	A	7.5	A	7.5	A
	PM	7.4	A	7.4	A	7.4	A
SR 14 Westbound Left Turn	AM	7.3	A	7.4	A	7.4	A
	PM	7.7	A	7.7	A	7.8	A
Plymouth Rd. Northbound Left Turn	AM	9.1	A	9.1	A	9.2	A
	PM	9.4	A	9.5	A	9.6	A
Plymouth Rd. Southbound Left Turn	AM	10.1	B	10.3	B	10.5	B
	PM	10.9	B	11.2	B	11.4	B

Delay = Average delay per vehicle

Low impacts are anticipated at the intersections of Christy Road/SR 14, Plymouth Industrial Road/SR 14, and SR 14/I-82 due to the low projected traffic volumes generated by the project.

The PGF would include 16 permanent parking stalls at the plant site. Peak employee use is anticipated during shift overlap at the beginning and end of the day shift and would require approximately 14 stalls. The remaining two stalls would accommodate visitors and deliveries.

Not all deliveries would require a parking stall because deliveries would occur in different areas of the plant site. It is anticipated that there would be no impacts from unmet parking needs.

No use of rail transportation, local or regional airports, or river ports would be required for PGF operation; therefore, no rail, air, or river transportation impacts are anticipated.

3.11.2.3.2 Transmission Interconnection

Construction of the transmission interconnection would not affect road, rail, air, or river traffic or transportation. No roads are located in the area where the transmission interconnection would be constructed, and vehicles necessary for construction and maintenance would cross vacant land to access the towers and lines.

3.11.2.4 Alternate 230-kV Transmission Interconnection

The impacts attributable to the 230-kV transmission interconnection would be the same as the impacts attributable to the proposed transmission interconnection because the 230-kV line is located in the same physical location as the proposed 500-kV line.

3.11.2.5 Alternate Benton PUD/BPA Transmission Interconnection

Construction of the alternate Benton PUD/BPA transmission interconnection would not affect road, rail, air, or river traffic or transportation. No roads are located in the area where the interconnection would be constructed, and vehicles necessary for construction and maintenance would cross vacant land to access the towers and lines. Christy Road and the BNSF railroad tracks are located near where the alternative Benton PUD/BPA transmission interconnection would be constructed.

3.11.2.6 Access Alternative

Trip generation for and impacts on the SR 14/Plymouth Road intersection would be similar if the alternate construction and operation access roads were used, with the exception that more construction vehicles leaving the site would turn west onto SR 14 rather than east. This difference would be similar to impacts under the Proposed Action or from the existing condition. The access roads and other impacts to local roads are discussed below.

3.11.2.6.1 Alternate Construction Access Road

An alternate construction access road would follow Christy Road from its intersection with SR 14 to a farm access road located just west of where Christy Road intersects with the BNSF railroad tracks. Construction vehicles would follow the farm road north and then east to the plant site. This access road would result in an increase in traffic on Christy Road and at the Christy Road/SR 14 intersection. This may result in a change to the LOS in the p.m. peak hour for vehicles turning onto SR 14. With the alternate construction access road, traffic conditions at the SR 14/Plymouth Road intersection are estimated to be similar to conditions described in Section 3.11.2.3.1 for the proposed access road. Moderate impacts would be anticipated to other local intersections.

3.11.2.6.2 Alternate Operation Access Road

The alternate operation access road would use the existing road that connects the Williams Northwest Gas Pipeline Company (Williams Co.) compressor station to Christy Road (see Figure 3.11-2). This alternative would change the distribution of traffic compared to the proposed access road. The employee and delivery vehicles would use Christy Road before intersecting with SR 14 to the west of the plant site or via Plymouth Road to the east. The LOS at the SR 14/Plymouth Road intersection would not change significantly and would be similar to the Proposed Action. As with existing conditions, caution should be taken at the BNSF railroad track crossing. Figure 3.11-3 shows the BNSF railroad track crossing at Christy Road on the road that presently leads to the Williams Co. compressor station. Other local intersections that may experience an increase in traffic include Christy Road/Plymouth Road (due to the increased use of Plymouth Road) and Christy Road/SR 14 (due to the increased use of Christy Road to the east). Both of these intersections are used for access to SR 14 and destinations beyond. As with the Proposed Action, low impacts are anticipated for project operation on local roads.

3.11.3 CUMULATIVE IMPACTS

Projects in the vicinity of the PGF that are either (1) in the review process, (2) approved but not yet constructed, or (3) under construction but not completed, and have potential cumulative impacts on transportation when combined with the PGF include the following:

- Hermiston Power Project, Hermiston, Oregon
- Wanapa Energy Center, Umatilla, Oregon
- Motor Speedway, near Boardman, Oregon
- Hanford Vittrification Plant, Hanford, Washington
- Wallula Project, Walla Walla County, Washington
- Schultz-Hanford BPA transmission line, near Hanford, Washington

The Schultz-Hanford BPA transmission line and the Wallula Project are not analyzed for cumulative transportation impacts because their construction periods were indeterminate in June 2002.

3.11.3.1 Construction

Cumulative transportation issues include construction workers driving to and from the site during construction, and operation workers or facility users driving to and from the site on a permanent basis. Construction workers transport is a concern for each project. Construction of the Hermiston Power Project would overlap with PGF construction for approximately 4 months at the beginning of PGF construction. Construction of the Hanford Vittrification Plant and the Motor Speedway would likely overlap with the entire PGF construction period.

Within the region around the PGF, the Hermiston Power Project, Wanapa Energy Center, Motor Speedway, and Hanford Vittrification Plant projects would likely result in greater traffic volumes on I-82 during construction due to their locations in and near Hermiston, Umatilla, Boardman, and the Tri-Cities, and to their resource needs. Currently, the average daily traffic (ADT) on I-82 is 14,000 to 15,000 vehicles. As discussed, PGF-related traffic would not represent a

noticeable increase in I-82's ADT due to the size of the PGF construction and operation workforce and the fact that truck deliveries are likely to miss the morning peak period. Also, as noted in Section 3.11.2.3.1, approximately 70 percent of PGF-related traffic would originate from east of the plant site and could therefore use I-82, while the remaining 30 percent would originate from west of the plant site. The traffic impact from the other projects could result in a moderate increase in traffic volume on I-82, but PGF-related traffic would not represent a noticeable increase. Capacity is available on I-82 to accommodate additional traffic. Therefore, although the cumulative impact could be moderate due to other projects, it would be less than significant due to available capacity on I-82.

3.11.3.2 Operation

The proposed project would generate approximately 60 vehicle trips per day. It is not anticipated that the small increase in trips on local roads associated with the proposed project would create traffic congestion or a diminution of the LOS at any affected intersection. Because the site area surrounding the proposed plant site is designated agricultural and heavy/light industrial under the *Benton County Comprehensive Land Use Plan* (Benton County n.d.), future development of the area could generate increased traffic. Traffic generated by the proposed project, together with traffic generated by future industrial development, could have a cumulative impact on traffic flow on local roads. However, the impact is expected to be low to moderate due to the low growth rate projected for rural areas of Benton County.

3.11.4 SUMMARY OF IMPACTS

Impacts to transportation attributable to the PGF would be low and moderate, and therefore less than significant. Features included in the design of the proposed project that would reduce impacts include the following:

- The applicant would provide WSDOT-approved safety signs during the construction period warning vehicles traveling along SR 14 of upcoming truck access points.
- The applicant would promote rideshare and vanpool programs for construction workers during the 7-month peak construction period, to reduce vehicle trips.

3.11.5 MITIGATION MEASURES

No significant impacts to transportation from the PGF would result and therefore, no mitigation measures would be required.



View from westbound Christy Road at BNSF crossing.



View from northbound alternate operation access road at BNSF crossing.

Figure 3.11-3
Railroad Crossing Photos

Figure 3.11-3 (Continued)

3.11.6 REFERENCES

Benton County. No date (n.d.). *Benton County Comprehensive Land Use Plan*.

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Transportation Research Board. 2000. *Highway Capacity Manual*. Table 17-2.

Washington State Department of Transportation (WSDOT). 2000. Manual 12-hour traffic count for SR 14/Plymouth Road intersection.

———. 2000. Manual truck count for SR 14/Plymouth Road intersection.